

WHAT IS CLAIMED:

1. An ultrasonic treatment instrument, comprising:
an ultrasonic transducer which generates ultrasonic waves
and a drive circuit therefor;
a battery to supply energy, including to the drive circuit;
a housing incorporating the ultrasonic transducer, the
battery and the drive circuit;
a probe having a distal end protruding from the housing and
a part that is coupled with the ultrasonic transducer so that the
ultrasonic waves are propagated by the probe outside the housing;
a movable member operable by an operator; and
a sensor circuit which detects movement of the movable
member, and
wherein the drive circuit is structured to drive the
ultrasonic transducer responsive to an output signal of the
sensor circuit.
2. An ultrasonic treatment instrument according to
claim 1,
wherein the sensor circuit is composed of a switch which is
actuated by the movement of the movable member.
3. An ultrasonic treatment instrument according to
claim 2, further comprising a second switch for supplying energy
from the battery to the drive circuit.
4. An ultrasonic treatment instrument according to
claim 1, wherein the sensor circuit is configured to detect the
magnitude of a clamping force generated by the movable member,

and to transmit an output signal corresponding to the clamping force to the drive circuit.

5. An ultrasonic treatment instrument according to claim 1,

wherein the sensor circuit is configured to detect the magnitude of a torque developed by the movable member, and to transmit an output signal corresponding to the torque to the drive circuit.

6. The ultrasonic treatment instrument of claim 5, wherein the sensor circuit comprises a torque sensor embedded within an axis of rotation associated with the movable member.

7. The ultrasonic treatment instrument of claim 6, in which the torque sensor comprises a strain gage.

8. The ultrasonic treatment instrument of claim 1, in which the sensor circuit comprises an electrical capacitance force detector.

9. The ultrasonic treatment instrument of claim 1, in which the sensor circuit comprises a piezoelectric element.

10. An ultrasonic treatment instrument, comprising:
an ultrasonic transducer to generate ultrasonic waves and a drive circuit therefor;
a probe coupled to the ultrasonic transducer and having a portion which is positioned adjacent a movable part;
a movable member which is operable to move the movable part;
and

a sensor circuit which detects movement of the movable member and which provides an output to the drive circuit of the ultrasonic transducer.